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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: H. William Harris, Edward M. Brown, and Steven C. Hebert

Application No.: 10/016,496 Group Art Unit: 1646

Filed: December 10, 2001 Examiner: Not assigned

Title: POLYCATION-SENSING RECEPTOR IN AQUATIC SPECIES  
AND METHODS OF USE THEREOF

CERTIFICATE OF MAILING	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202	
on 7/23/02	Annie Semirel
Date	Signature
Annie Semirel	
Typed or printed name of person signing certificate	

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
P.O. Box 2327  
Arlington, VA 22202

Sir:

This Information Disclosure Statement is submitted:

- ☐ under 37 CFR 1.129(a), or  
(First/Second submission after Final Rejection)
- ☒ under 37 CFR 1.97(b), or  
(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).
- ☐ under 37 CFR 1.97(c) together with either:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, or
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or  
(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, and
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or  
(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)
- ☐ under 37 CFR 1.97(i):  
Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.  
(Filed after payment of issue fee)

Statement Under 37 CFR 1.97(e)

- ☐ Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- ☐ No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

Applies to original applications (other than design) filed on or after May 29, 2000

- ☐ Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.
- ☒ Enclosed herewith is form PTO-1449:
  - ☐ Copies of the cited references are enclosed.
  - ☒ Copies of cited references are enclosed except those entered in prior application, U.S. Application No. 09/162,021, to which priority under 35 U.S.C. 120 is claimed. The earlier application contains copies of the cited references.
  - ☐ The listed references were cited in the enclosed International Search Report in a counterpart foreign application.
  - ☐ The "concise explanation" requirement (non-English references) for reference(s) ☐ under 37 CFR 1.98(a)(3) is satisfied by:
    - ☐ the explanation provided on the attached sheet.
    - ☐ the explanation provided in the Specification.
    - ☐ submission of the enclosed International Search Report.
    - ☐ submission of the enclosed English-language version of a foreign Search Report and/or foreign Office Action.
    - ☐ the enclosed English language abstract.

☐ Applicant requests that the following non-published pending applications be considered:

Examiner's  
Initials

\_\_\_\_ U.S. Patent Application No. [ ], by [inventor(s)], filed [ ], Docket No.: [ ]  
\_\_\_\_ U.S. Patent Application No. [ ], by [inventor(s)], filed [ ], Docket No.: [ ]  
\_\_\_\_ U.S. Patent Application No. [ ], by [inventor(s)], filed [ ], Docket No.: [ ]

\_\_\_\_\_  
Examiner

\_\_\_\_\_  
Date

- ☐ A copy of each above-cited application, including the current claims, is enclosed.
- ☐ A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. [ ], to which priority under 35 U.S.C. 120 is claimed.

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

It is requested that the information disclosed herein be made of record in this application.

Method of payment:

- ☐ A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.
- ☐ Please charge Deposit Account 08-0380 in the amount of \$[ ]. A copy of this Statement is enclosed.
- ☒ Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

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PTO-1449 REPRODUCED

ATTORNEY DOCKET NO.  
2856.1001-011Prior APPLICATION NO.  
10/016,496INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

July 23, 2002

JUL 26 2002

APPLICANT  
H. William Harris, et al.FILING DATE  
December 10, 2001GROUP  
1646

## U.S. PATENT DOCUMENTS

EXAM- INER INI- TIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
	AA	4,703,008	10/27/87	Lin	435	240.2	
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
	AL	WO 97/35977	02/10/97	PCT			
	AM	WO 98/15627	16/04/98	PCT			
	AN						
	AO						
	AP						
	AQ						

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

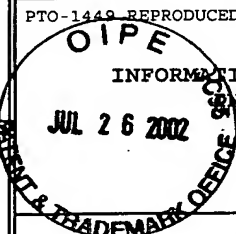
	AR	Aida, K., et al., "Molecular Cloning of a Putative Ca <sup>2+</sup> Sensing Receptor cDNA from Human Kidney," <i>Biochemical and Biophysical Research Communications</i> , 214(2):524-529 (1995)
	AS	Alberts, B., et al., "Cell Junctions, Cell Adhesion, and the Extracellular Matrix," <i>Molecular Biology of The Cell</i> , 950-954
	AT	Anast, C.S., et al., "Evidence for Parathyroid Failure in Magnesium Deficiency," <i>Science</i> , 177:606-608

EXAMINER

DATE CONSIDERED

PTO-1449 REPRODUCED		ATTORNEY DOCKET NO. 2856.1001-011		Prior APPLICATION NO. 10/016,496			
INFORMATION DISCLOSURE CITATION IN AN APPLICATION July 23, 2002 <b>JUL 26 2002</b>		APPLICANT H. William Harris, et al.					
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FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
	AU	Brown, E.M., et al., "Cloning and Characterization of an Extracellular Ca <sup>2+</sup> -Sensing Receptor from Bovine Parathyroid," <i>Nature</i> , 366:575-580 (1993)					
	AV	Brown, E.M., et al., "Calcium-Ion-Sensing Cell-Surface Receptors," <i>The New England Journal of Medicine</i> , 333(4):234-240 (1995)					
	AW	Darnell, J., et al., "The Plasma Membrane," Chapter 13 in <i>Molecular Cell Biology</i> , 516-520 (1990)					
	AX	Davenport, J., "Synopsis of Biological Data on the Lumpsucker," <i>Food and Agriculture Organization of the United Nations</i> , Synopsis No. 147 pp. 1-19 (1985)					
	AY	Du, S.J., et al., "Growth Enhancement in Transgenic Atlantic Salmon by the Use of an "All Fish" Chimeric Growth Hormone Gene Construct," <i>Bio/Technology</i> 10:176-181 (1992)					
	AZ	Evans, D.H., "Osmotic and Ionic Regulation," Chapter 11 in <i>The Physiology of Fishes</i> , (CRC Press, Boca Raton, FL) pp. 315-341 (1993)					
	AR2	Evans, G.H., et al., "Association of Magnesium Deficiency with the Blood Pressure-Lowering Effects of Calcium," <i>Journal of Hypertension</i> , 8(4):327-337 (1990)					
	AS2	Fauci, A.S., et al., "Cardinal Manifestations and Presentation of Diseases," <i>Principles of Internal Medicine</i> , p. 260					
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AT2	Fenkel, Y., et al., "Hypocalciuria of Preeclampsia Is Independent of Parathyroid Hormone Level," <i>Obstetrics &amp; Gynecology</i> , 77(5):689-691 (1991)		
AU2	Fuleihan, G.E., et al., "Calcium Modulation of Adrenocorticotrophic Hormone Levels in Women," <i>Endocrine-Hypertension Division and Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA 02115</i> , pp. 1-3		
AV2	Gamba, G., et al., "Primary Structure and Functional Expression of a cDNA Encoding the Thiazide-Sensitive, Electroneutral Sodium-Chloride Cotransporter," <i>Proc. Natl. Acad. Sci.</i> 90:2749-2753 (1993)		
AW2	Gardner, W.D. and Osburn, W.A., "Structure of the Human Body," <i>Genitourinary System</i> pp. 365-366 (1967)		
AX2	Garrett, J.E., et al., "Molecular Cloning and Functional Expression of Human Parathyroid Calcium Receptor cDNAs," <i>The Journal of Biological Chemistry</i> , 270(21):12919-12925 (1995)		
AY2	Hedemann, L., et al., "The Familial Magnesium-losing Kidney," <i>Acta Med Scand</i> 219(1):133-6 (1986)		
AZ2	Hew, D.L., et al., "Antifreeze Protein Gene Transfer in Atlantic Salmon," <i>Molecular Marine Biology and Biotechnology</i> 1(4/5):309-317 (1992)		
AR3	Lonning, S., et al., "A Comparative Study of Pelagic and Demersal Eggs from Common Marine Fishes in Northern Norway," <i>Sarsia</i> , 73:49-60 (1988)		
AS3	Norris, D.O., "Endocrine Regulation of Iono-Osmotic Balance in Teleosts," Chapter 16 in <i>Vertebrate Endocrinology</i> , Lea and Fabiger, eds. (Philadelphia, PA) pp. 425-443 (1985)		
AT3	Plotkin, M.D., et al., "Localization of the Thiazide Sensitive NA-CL Cotransporter (TSC) in the Mammalian Kidney," <i>J. Am. Soc. Nephrol.</i> , 6:349A (1995)		
AU3	Ramos, L.S., et al., "Urinary Calcium As an Early Marker for Preeclampsia," <i>Obstetrics &amp; Gynecology</i> , 77(5):685-688 (1991)		
AV3	Riccardi, D., et al., "Cloning and Functional Expression of a Rat Kidney Extracellular Calcium/Polyvalent Cation-Sensing Receptor," <i>Proc. Natl. Acad. Sci. USA</i> 92:131-135 (1995)		
AW3	Roberts, J.M., "Prevention or Early Treatment of Preeclampsia," <i>The New England Journal of Medicine</i> 337:124-125 (1997)		
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	AX3	Rokaw, M., et al., "Rapamycin(RAP) Stimulates Sodium Transport in A6 Cells Through Inhibition of Protein Kinase C (PKC), "J. Am. Soc. Nephrol 6:349A (1995)	
	AY3	Renfro, J.L., "Water and Ion Transport by the Urinary Bladder of the Teleost <i>Pseudopleuronectes Americanus</i> ," <i>American Journal of Physiology</i> 228(1):52-61 (1975)	
	AZ3	Sands, A.T., et al., "High Susceptibility to Ultraviolet-Induced arcinogenesis in Mice Lacking XPC," <i>Nature</i> 377:162-165 (1995)	
	AR4	Sands, J.M., et al., "Apical Extracellular Calcium/jPolyvalent Cation-sensing Receptor Regulates Vasopressin-elicited Water Permeability in Rat Kidney Inner Medullary Collecting Duct," <i>J. Clin. Invest.</i> 99(6):1399-1405 (1997)	
	AS4	Siner, J., "Cloning of an Aquaporin Homologue Present in Water Channel Containing Endosomes of Toad Urinary Bladder," <i>Am. J. Physiol.</i> 270:C372-C381 (1996)	
	AT4	Targovnik, J.H., et al., "Regulation of Parathyroid Hormone Secretion in Vitro: Quantitative Aspects of Calcium and Magnesium Ion Control," <i>Endocrinology</i> 88:1477-1482 (1971)	
	AU4	Taufield, P.A., et al., "Hypocalciuria in Preeclampsia," <i>N Engl J Med</i> 316(12):715-718 (1987)	
	AV4	Yamagami, K., et al., "Molecular and Cellular Basis of Formation, Hardening, and Breakdown of the Egg Envelope in Fish," <i>International Review of Cytology</i> , 136:51-92 (1992)	
	AW4	Veillette, P.A., et al., "Cortisol Mediates the Increase in Intestinal Fluid Absorption in Atlantic Salmon during Parr-Smolt Transformation," <i>General and Comparative Endocrinology</i> 97:250-258 (1995)	
	AX4	Zadunaisky, J.A., et al., "Osmolarity and Cell Volume Changes of Chloride Cells: The Nature of the Rapid Signal for Adaptation to Salinities of <i>Fundulus Heteroclitus</i> ," <i>Bull. MDI Biol. Lab.</i> , 32:152-156 (1992)	
	AY4	Cole, et al., "Isolation and Characterization of Pleurociden, an Antimicrobial Peptide in the Skin Secretions of Winter Flounder," <i>J. Biol. Chem.</i> 272:12008-12013 (1997)	
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AZ4	Forster, R. P., et al., "Formation of excretory products," Chapter 5 of Fish Physiology, Academic Press, New York, NY, pages 313-345 (1969).		
AR5	Elger, E.B. et al., "Adaption of renal function to hypotonic medium in winter flounder," <i>J. Comp. Physio.</i> B157:21-30 (1987)		
AS5	Bai, M., et al., "Expression and characterization of inactivating and activating mutations in human $Ca^{2+}$ Sensing Receptor," <i>J. Biol. Chem.</i> , 32:19537-19545 (1996)		
AT5	Brown, E.M., et al., "A comparison of the effects of divalent and trivalent cations on parathyroid hormones release," <i>Endocrinol.</i> , 127:1064-1071 (1990)		
AU5	Ward, P.T. et al., "Disulfide Bonds in the Extracellular Caladium-Polyvalent Cation-Sensing Receptor Correlate with Dimer Formation and its Response to divalent cations in Vitro," <i>Am Soc. Biochem. Mol. Bio.</i> , 272:23; 14478-14483 (1998)		
AV5	Naito, T. et al. "Putative pheromone receptors related to the $Ca^{2+}$ -sensing receptor in <i>Fugu</i> ," <i>Proc. Natl. Acad. Sci.</i> , 95:5178-5181 (April 1998).		
AW5	J. Nearing, et al., "Cloning and Expression of a Homologue of the Calcium ( $Ca^{2+}$ )/Polyvalent Cation Receptor (CaR) Protein That Acts as a Magnesium ( $Mg^{2+}$ ) Sensor in Dogfish Shark ( <i>Aqualus acanthias</i> ) Kidney," ASN 30 <sup>th</sup> Annual Meeting, November 2-5 1997		
AX5	Ryba, N.J., et al., "A New Multigene Family of Putative Pheromone Receptors," <i>Neuron</i> , 19(2):371-379 (1997)		
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